



Patent
Attorney's Docket No. 027650-499

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of) Mail Stop Amendment
Rolf Lasson) Group Art Unit: 1733
Application No.: 10/760,306) Examiner: JUSTIN R FISCHER
Filed: January 21, 2004) Confirmation No.: 1507
For: METHOD OF PRODUCING)
PACKAGING MATERIAL IN THE)
FORM OF A CONTINUOUS)
LAMINATE WEB)

DECLARATION UNDER 37 C.F.R. § 1.132

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

I, Rolf Lasson, hereby state as follows:

1. I am the inventor of the subject matter claimed in the above-identified application.

2. I have been employed by AB Tetra Pak beginning in 1978 as a Process Technician and since 1992 as a Development Engineer in the area of Lamination Technology. One of my responsibilities in my current position at AB Tetra Pak involves developing new inventions and improvements pertaining to packaging material technology, including packaging material in the form of a continuous laminate web.

3. Packaging material of the type at issue in this application includes a core web of paper or cardboard, a thermoplastic material and a metal foil (e.g., aluminum). Oftentimes, the metal foil is adhered to the core web by an adhesive.

4. AB Tetra Pak produces packaging material which we then sell to our customers for use in packaging foodstuff. Prior to development of the subject matter

disclosed and claimed in this application, packaging material of the type described above was typically produced by combining the core web, the metal foil and the thermoplastic material under pressure and heat, for example through use of rollers. The resulting packaging material is then stored in web form on a reel which is then delivered to our customers. The customer uses converting equipment to convert the web of packaging material into filled packaging containers. This conversion involves forming the web of packaging material into a tubular shape, filling the tube with foodstuff, transversely sealing the tube at spaced apart locations to form individual segments, and separating and folding the individual segments into individual packaging containers of the desired configuration.

5. As I discovered, the known packaging material described above suffers from a number of disadvantages and drawbacks. In the case of packaging containers for liquid foodstuff, the customer must provide the packaging material with some form of opening arrangement so that after the packaging material is converted into filled packaging containers the consumer can dispense the contents. This usually involves forming a through hole, aperture or slit (hereinafter collectively referred to as a through hole) in the web of packaging material before the packaging material web is filled, sealed, separated into individual containers and folded into the desired configuration. In addition, to make sure that the liquid foodstuff in the packaging container does not contact the exposed edge of the through hole and infiltrate the packaging material, the customer must apply a covering strip or patch to one side of the packaging material (the side which ultimately faces toward the interior of the packaging container). The customer also applies a pull tab or the like to the opposite side of the packaging material. The pull tab is joined to the cover

strip or patch so that when the consumer pulls the pull tab, an opening exists in the packaging container allowing the foodstuff to be dispensed. The need for the customer to form the through hole in the packaging material and apply the cover strip to the packaging material necessarily reduces the operational efficiency of the conversion process because additional time is required to form the through hole and apply the cover strip. This also entails additional expense and complexity due at least in part to the fact that equipment specifically adapted to form the through hole and apply the cover strip is required and must be appropriately integrated with the converting equipment.

6. Having recognized at least the foregoing shortcomings, I investigated the construction and manufacture of this packaging material in an attempt to develop a manufacturing method not as susceptible to the drawbacks and disadvantages discussed above. In particular, I investigated the possibility of fabricating the packaging material to avoid the need for forming the through hole and applying the cover strip during the converting process. These developmental efforts led to the subject matter described and claimed in the present application.

7. I found that certain advantages could be achieved by forming the through hole in the core web of paper or cardboard before the core web is joined to other layers forming the packaging material. By forming the through hole in this way, the through hole can be formed at the time the web of packaging material is fabricated. Thus, the need for forming the through hole, and possibly also applying the cover strip, during the conversion process could be avoided. However, during development of this invention, other difficulties were encountered.

8. I discovered, for example, that when the core web of paper or cardboard is first provided with the through hole, problems arise when this core web is subsequently combined with the metal foil and the thermoplastic material. That is, when the core web possessing the through hole was combined with the metal foil and the thermoplastic material, the metal foil and the thermoplastic material were not joined with sufficient pressure in the area of the through hole to minimize or prevent entrapped air. This is because in the area of the core web where the through hole is located, there exists insufficient support to press against and remove air between the metal foil and the thermoplastic material when the three layers (the core web, the metal foil and the thermoplastic material) are combined. Thus, in the region of the through hole, insufficient pressure is exerted between the metal foil and the thermoplastic material to adequately remove the air in this region.

9. Excessive air entrapped between the metal foil and the thermoplastic material can create problems once the packaging material is converted into filled packaging containers. Entrapped air represents a potential failure mechanism because the entrapped air can contribute to cracking of the metal foil when the packaging material is converted into a packaging container. In addition, entrapped air can diffuse through the metal foil, thus reducing the shelf life of the foodstuff and causing premature spoilage of the foodstuff.

10. After further developmental efforts, I discovered that joining together the metal foil and the thermoplastic material before combining those two layers with the core web reduced the problem of excessive air entrapped between the metal foil and the thermoplastic material. By joining the metal foil to the thermoplastic material in this manner, the through hole in the core layer did not adversely affect the way in

which the metal foil and the thermoplastic material are joined together and sufficient pressure can be applied throughout the metal foil and the thermoplastic material to help facilitate the removal of air and prevent the entrapment of excessive air. In accordance with the present invention, once the metal foil and the thermoplastic material are joined together to form a united laminate web, the resulting united laminate web is joined to the core web provided with the through hole.

11. Thus, the invention at issue in this application involves a number of different aspects. One aspect involves utilizing a core web of paper or cardboard possessing one or more through holes formed prior to joining the core web to the metal foil and the thermoplastic material. As discussed above, this improves the operational efficiency with which the web of packaging material can be converted to filled packaging containers because it is no longer necessary for the customer to form though holes in the web of packaging material as the packaging material is being converted to filled and sealed packaging containers. Another aspect of the invention involves joining together the metal foil and the thermoplastic material before they are combined with the core web provided with the through holes to thereby minimize the entrapment of air between the metal foil and the thermoplastic material, thus avoiding the difficulties discussed above.

12. I have reviewed the Official Action issued on August 8, 2005 in this application together with the references relied upon by the Examiner. None of those references discloses utilizing a core web of paper or cardboard provided with a through hole prior to joining the core web to other materials forming the packaging material web. I understand the Examiner's position on this point is that the discussion in the background portion of the present application describes that

containers are often provided with opening apertures. However, what is described in the background portion of the present application is the conventional manner of fabricating packaging material in which holes apertures or slots are formed in the web of packaging material after the paper-based core web, the metal foil and the thermoplastic material are joined together. Thus, the background portion of the present application does not describe that it was known prior to the present invention to produce a packaging material web by joining a core web, already possessing a through hole, with other materials forming the packaging material web. In addition, the references cited in the Official Action do not recognize the problems I discovered during development of the present invention -- namely that joining the three layers (i.e., the core web provided with the through hole, the metal foil and the thermoplastic material) together at the same time creates air entrapment difficulties which can lead to a host of other problems. Thus, the cited references would not have led one skilled in this art to do that which is claimed in this application.

13. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Date: February 1, 2006



Rolf Lasson